

RECENTLY PATENTED INVENTIONS.

Engineering.

DITCHING MACHINE.—George M. Pilcher, Logansport, Ind. This machine has a swinging boom, a driving rod operated by cable mechanism, and movable converging shovels working in guides at the lower end of the driving rod, to force the shovels downward and together, the machine having an attachment adapted to break up frozen ground and rock. The machine is adapted, as it is moved along, to rapidly and economically excavate a smooth wall ditch, the carriage being provided with a boiler and engine of any suitable type, and the shovels being raised and lowered by suitable hoisting mechanism.

Railway Appliances.

HAND COUPLING DEVICE.—William E. Burris, Kansas City, Mo. The extensive use of the old style link and pin coupling, notwithstanding the many improvements made, has led the inventor to devise this device, which consists of a spring-controlled extension rod, to be attached to the arm, and which when not in use will be concealed beneath the coat sleeve, but which may be readily elongated and held in extended position to guide a link when cars are being coupled, obviating the necessity of trainmen going between the cars for this purpose. The device is of simple construction and inexpensive, and has received the indorsement of prominent railway officials.

SWITCH OPERATING DEVICE.—Handley P. Cogswell, Brooklyn, N. Y. The switch rail is, according to this invention, connected with a switch lever located about centrally of the track, and adapted to be operated by shoes connected with and extending beneath the car. The improvement is especially applicable to street cars, enabling a switch to be readily opened or closed from a moving car.

RAILROAD TIE.—John C. Lee, Beaver, Texas. This is a metallic tie having on its ends elevated track supports, each having dovetailed recesses to which are fitted jaws, the jaws as well as the support being bound by a bolt upon the foot and web of the rail. The rail is thus forced into firm contact with the tie, and the latter is prevented from tilting on its foundation. The bottom of the tie is transversely ribbed under the rail seat to prevent lateral movement.

Electrical.

ARC LAMP.—Manuel R. Gutierrez and Milton T. Thompson, Jalapa, Mexico. The carbons of this lamp are arranged on pivotal supports, so that they are held at varying angles while being consumed, the arrangement being such that there will be nothing to intercept the rays of light from falling directly below the lamp, no portion of the carbon supports being below the arc formed. The lamp occupies only a small space, and is light and easy to handle.

AUTOMATIC CIRCUIT CLOSER.—Henry Lewers, Carson City, Nev. A simple and effective device for fire alarm circuits is provided by this invention. A tube of insulating material permanently closed at one end contains a spring to which is fitted a follower, while a stopper of insulating material fitted to the open end of the tube carries two electrical contact pieces, there being a circuit-closing pin in the central bore of the stopper, and a cap with fusible or explosive material for holding the contact plug away from the contact pieces. The device is actuated to give an alarm when heated above a certain temperature.

Mechanical.

LET-OFF MECHANISM FOR LOOMS.—Jeremiah C. Bill, Willimantic, Conn. Combined with a pivoted counterbalanced arm over which the warp threads pass is a pivoted sliding cam connected with and rocked on its axis from the arm, a friction wheel loose on the axis of the cam being moved laterally by the cam and geared to the warp beam, while a power-driven friction wheel also on the axis is engaged by the other friction wheel when the cam is rocked from the counterbalanced arm. The invention is an improvement on a former patented invention of the same inventor, the device being of simple construction, with but few parts and not liable to get out of order, although very sensitive and automatic in operation.

COMPENSATED PENDULUM MOTOR.—John M. Cayce, Nashville, Tenn. According to this improvement two aligned shafts are arranged coincidentally with the fulcrum of a tilting frame, and provided one with a weighted pendulum and the other with a weighted arm projecting in an opposite direction, there being pulleys mounted on the shafts and on a superposed rock shaft, with belts arranged to cause a given motion to the rock shaft to impart a reversed motion to the pendulum and counterweight.

MOTOR.—John C. Lueneburg, Lakefield, Minn. This is an improvement on a formerly patented invention of the same inventor, and consists of a main driving shaft rotated by gear wheels moved by a sprocket chain, a reciprocating crosshead carrying spring-pressed pawls adapted to engage the strands of the chain. The motor is especially designed for readily and powerfully propelling vessels, vehicles, etc., by the strength of the occupant.

WAVE AND CURRENT POWER.—Singleton Husted and Irvin P. Doolittle, Los Angeles, Cal. An intake box arranged near the shore is adapted to receive water at the highest point of the waves, and a raceway leading from this box contains a water motor, the raceway being arranged in the path of the undertow, or outgoing current, to make use of its suction or exhaust. If desired, a number of intake boxes may be connected with each other, to permit a very large amount of water to pass down the raceway at the receding of the waves.

WRENCH.—William A. Papoun, Baker City, Oregon. In this tool a toothed shank carries the fixed jaw, a movable jaw with a handle part sliding on the shank. In the movable jaw is a sliding finger piece engaging bevels on the jaw, while a toothed plate en-

gages the shank, a button projecting from the plate through a longitudinal slot of the finger piece. The construction is strong and simple, and the jaw may be very conveniently locked and unlocked for adjustment to various sized objects.

SAW CLAMP.—Fernando W. Seaver, Bennington, Ind. This is a strong and simple device for holding saws to be dressed, and consists of an upright frame whose upper ends are secured to a long jaw, and on this frame is fulcrumed a swinging frame with side levers carrying a jaw at their upper end, the jaws having flat surfaces adapted to fit snugly against a saw. Both hands may be used to place the saw, which is fixed by a single movement of the foot by a treadle-operated cam mechanism.

Agricultural.

CANE PLANTER.—Eligio Olivera y Martinez, Havana, Cuba. This is a machine of strong and simple construction, which cuts the cane in suitable lengths for planting as fast as it can be fed to the cutters, and then deposits the cane in the furrows prepared to receive it while the machine is advancing. The machine is also provided with markers, to be carried in the direction of either side, and has a covering device for closing the furrows after the cane has been deposited, the cutters and planting cylinders being automatically operated as the machine is drawn over the ground.

PEA SHELLING MACHINE.—David A. Gaither, Williston, Tenn. The peas as gathered from the vines and poured into the hopper of this machine are fed to thrashing or hulling cylinders so grouped, and sustaining such relation to each other, that the pods will be broken, the peas thrashed out, and the pods separated and delivered in one direction while the peas go into an off-take chute, where they receive an air blast to free them from all foreign particles.

COTTON CULTIVATOR.—Henry Nehrmeyer, Reinhardt, Texas. This machine has at its front end opener or weeding plow to cut the plants to form the rows, while a series of finger plow gangs is arranged to travel between the paths of the weeding plows over the rows or intended stand, the beams of the latter plows having their front ends pivotally connected to the main frame, and their rear ends held for independent vertical movement. The machine is particularly adapted to thin out irregular growths and bring them to a proper stand in a quick and economical manner, five or more stands being obtained at one operation of the machine.

Miscellaneous.

SHINGLE BUNCH AND BINDER.—William J. Munro, Joseph Hart and David Batey, Sedro, Wash. According to this invention shingles are bunched to occupy the least possible space for kiln drying or transportation, the shingles being arranged in substantially the usual way, but the invention providing a novel form of binder occupying scarcely any space, easily applied, and having the necessary strength, the bunching being thus effected more economically than by the ordinary method.

SASH FASTENER.—Wellman E. Cline, Doylestown, Ohio. This is a lock and stop, consisting of a casing in which a locking wheel is eccentrically pivoted, a spring-controlled operating lever being eccentrically connected with wheel by a link. The device is inexpensive and may be applied to a window frame for engagement with the sash, or attached to the sash for engagement with the frame, in either case permitting the sash to be readily raised or lowered from a locked position, upon releasing the lock, the sash being otherwise firmly held.

TRANSOM LIFTER.—George M. Garland, Des Plaines, Ill. This invention provides a simple mechanism by which one or a series of ventilators may be conveniently worked. A bell crank lever pivoted at its angle to the transom frame is connected by one of its arms through a link with the free end of the transom, the other arm being connected with an operating cable. Pivoted rod connections guide the movement of the transom and bell crank lever, and the device is quite inexpensive.

COAL SCREEN, ETC.—George W. Cross, Pittston, Pa. The screening surface of this screen is constructed of segmental plates in which are openings corresponding to the meshes of wire screens. The openings of the screen are, however, separated by walls of a peculiar undulating form, presenting alternate convex and concave surfaces, to cause the coal or other lumpy material to practically pause and turn at the meshes, instead of sliding over them, thereby facilitating the sizing of coal.

VEHICLE SEAT.—Charles M. Kellogg, Chetek, Wis. This seat has a lazy back section which has a hinged connection with the back proper of the seat, and is connected with spring-cushioned slides, so that when one presses against the lazy back section it will fall back somewhat against the tension of the spring. The seat is designed to be very comfortable, enabling one to assume any desired position in traveling.

ICE CREAM FREEZER.—Thomas J. Harton, Waco, Texas. This freezer is essentially a revolvable cylinder divided into a series of compartments, the central one being adapted to receive the cream moulds or receptacles, an end compartment receiving milk or lemonade, etc., and intermediate compartments holding ice or other freezing medium, the cylinder being supported in a suitable casing and revolved by a crank.

ENVELOPE FASTENER.—Paul E. Gonon, New York City. A separate straight elastic arm attached to the envelop flap is, according to this invention, adapted to be bent or crimped near its ends to engage apertures in the back of the envelope, and when released to enter the envelope by its elasticity, whereby the flap is locked to the back of the envelope without using an adhesive substance.

VENDING MACHINE.—Edward D. Valentine, New York City. This machine has an upright coin passage in which a flat spring is arranged to be pressed upon by a descending coin, a swinging frame

containing the goods to be vended, while a package discharging mechanism arrested by the spring is released by the pressure of the coin. The machine may be adjusted to deliver various small articles in separate packages.

TRAP.—Hubbard S. Goff and Alvin B. Judkins, Los Angeles, Cal. This invention covers an improvement in animal traps, which may also be used to catch fish. It has oppositely arranged spring-pressed jaws pivoted together at their inner ends, one of them having an opening to facilitate baiting, a locking mechanism holding the jaws open, a trigger releasing them, and a hook closing the bait opening.

ANCHOR FOR VESSELS.—Ruben Zertuche, Saltillo, Mexico. This anchor is more especially designed for flat-bottomed vessels, the anchor consisting of a flat rectangular plate of sheet metal, designed to be supported by the anchor chain in a nearly horizontal position in the water below the vessel, and not to take hold on the bottom, the column of water bearing upon the flat plate serving to hold the vessel steady, keep its head to the wind, and prevent drifting to leeward.

VESSEL CONSTRUCTION.—The same inventor has obtained another patent for a novel construction of the hull of a vessel, according to which a flat plate extends beyond both sides and flush with the stem and stern, there being a buoyant compartment between the plate and hull, and braces removably connected with the hull and plate. The vessel is designed to be of very light draught and have great stability.

TENT.—George Tolmie, Carbon, Wyoming. A door-closing strip extends across the threshold of the door opening, according to this invention, while a flooring strip is connected with the threshold portion of the closing strip, there being inside cords adapted to fold the closing strip upward over the opening, or open it out, from the inside.

PNEUMATIC TIRE.—William R. Barrett, Passaic, N. J. This tire has an inner inflatable tube with the usual valve, an outer split cover with interlocking coils at the meeting edges, washers encircling the valve of the inner tube, while a flexible fastening rod has one end held to one washer and the other end screw-threaded to engage the other washer. This tire may be readily fastened to a wheel, and its cover readily opened to give access to the inner tube, which may be easily taken out and a new one substituted.

STAND ATTACHMENT FOR BICYCLES.—Elihu S. Bishop, Milton-on-the-Hudson, N. Y. A bracket which may be readily applied to the bicycle frame has a pivotally connected spring-controlled leg, which also carries a brake shoe and a locking device. When not in use the attachment may be readily folded up out of the way.

BADGE.—James R. Lee, Baltimore, Md. This badge consists of a ribbon on the face of which is secured a separate emblem-bearing fabric by means of a novel form of foundation, which maintains the fabric in convex form for the better display of the emblem.

MARKING DEVICE.—Edward W. Dodge, Augusta, Ga. This device comprises an open frame within which is stretched an ink ribbon or fabric, with both surfaces exposed, the device forming a transfer slate, to be written upon with a stylus when the characters traced are transferred to the articles beneath.

DESIGN FOR A SPOON.—Austin F. Jackson, Taunton, Mass. In this design the handle is waved or serpentine and has beadlike representations forming the border of a central panel, above which is the simulation of a shield.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

NEW BOOKS AND PUBLICATIONS.

OBJECTS OF INTEREST TO ENGINEERS AND OTHERS IN AND ABOUT PHILADELPHIA. Philadelphia. 1893. Pp. 109.

Philadelphia, pre-eminently a manufacturing city, is treated in this work as an engineers' inspection field. The different factories and engineering objects situated in it and about it are here indexed and their addresses and striking features given, with full references to the accompanying map. It is issued by the Engineers' Club, and is in all ways an admirable publication.

SLIDE VALVE DIAGRAMS. A French method for constructing slide valve diagrams. By Lloyd Bankson. New York: D. Van Nostrand Company. 1892. Pp. 29. Price 50 cents.

Eight folding plates are required to elucidate the short text of this book. It gives a graphic method of solving slide valve problems and from its conciseness and simplicity will, we are sure, be found of use to the designer of engines.

A STANDARD DICTIONARY OF THE ENGLISH LANGUAGE. Prepared by more than two hundred specialists and other scholars, under the supervision of Isaac K. Funk, editor in chief; Francis A. March, consulting editor; Daniel S. Gregory, managing editor. Associate editors, Arthur E. Bostwick, John Denison Champlin, Rossiter Johnson. Volume I. New York, London and Toronto: Funk & Wagnalls Company. 1893. Pp. xx, 1060.

We have received the first volume of Funk & Wagnalls dictionary. When we consider that the work is designed to surpass, in its number of words, all preceding dictionaries of the English language, that it takes cognizance of the most recent philological developments in the way of spelling, pronunciation, and derivation, that it is profusely illustrated with not only wood cuts but also with very elegant colored plates, the utter inadequacy of a review within the limits of our space will be apparent. Its list of editors embraces many names in all possible connections. Simplicity, accuracy, and comprehensiveness are alleged to be three features impressed

upon the corps of editors. The distinctive features indicate a thorough systemization of the work. Thus the etymology is placed after the definition. In the definition of words the most common meaning is given first, the order of usage replacing the historical order hitherto favored. For giving the pronunciation of words what is known as the scientific alphabet is used. This alphabet has been prepared and recommended by the American Philological Association and adopted by the American Spelling Reform Association. This is an immense advance over the arbitrary system used in so many other works of this character. Quotations are referred to book, page, and edition, as well as to the author's name, so that they are susceptible of verification in the library. New quotations have been sought for, the works of 3,000 authors having been read by nearly 1,000 readers. Disputed pronunciations and spellings, various pronunciations of words and nearly 5,000 pictorial illustrations have all received the fullest consideration and the most advanced treatment. It is claimed that it will contain 280,000 words and terms—55,000 more than in any other dictionary. The prospectus develops this and other salient features and indicates very advanced views on the part of the editors as to the proper methods of constructing such a work.

The Art Wall Papers of H. Bartholomae & Co., of West Twenty-third Street, New York, and a branch of the National Wall Paper Company, afford the subject of a beautiful set of plates recently published by the firm in folio form, in heavy board covers. They include views of the hall, parlor, library, dining hall, and boudoir, elegantly and artistically furnished and decorated in new and rich styles designed by the artist of the firm, Mr. Paul Groeber, of Rutherford, N. J., who also makes the drawings for this folio. The artist received a special medal at the World's Columbian Exposition for the architectural design and decorations of the pavilion of the National Wall Paper Company's exhibit.

From Thomas J. Dowling, Commissioner, having charge of the Bureau of Statistics of Labor of New York State, we have received four volumes published by the Bureau, and principally compiled under the direction of his predecessor, Charles F. Peck. They treat of "Strikes and Boycotts," "Rates of Wages," and "Economic Development for Ten Years."

Any of the above books may be purchased through this office. Send for new book catalogue just published. MUNN & CO., 361 Broadway, New York.

SCIENTIFIC AMERICAN BUILDING EDITION.

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- Elegant plate in colors showing a suburban dwelling at Plainfield, N. J., erected at a cost of \$4,800 complete. Floor plans and perspective elevation. A tasteful design. Messrs. Rossiter & Wright, architects, New York.
- Plate in colors showing an elegant residence at Pelham Manor, N. Y. Perspective view and floor plans. Estimated cost \$7,000 complete. An excellent design.
- The Jamaica Club House, recently erected at Jamaica, N. Y. Perspective views and floor plans, also an interior view. Cost \$9,000 complete. Messrs. Hans & Osborne, architects, Brooklyn, N. Y.
- A beautiful residence at Portchester, N. Y., recently erected for A. V. Whiteman, Esq. Perspective and floor plans. Mr. Frank W. Beall, architect, New York.
- Engravings and floor plans of a suburban residence erected at Ashbourne, Pa., at a cost of \$4,800 complete. An attractive design. Harrison Allbright, Esq., architect, Philadelphia, Pa.
- A suburban dwelling recently erected at Edgewater, Ill., at a cost of \$10,216. Floor plans and perspective elevation. Mr. F. B. Townsend, architect, Chicago.
- A colonial cottage at Buena Park, Ill., recently completed for Guy Magee, Esq. Floor plans and perspective elevation. An artistic design.
- A modern half-timbered cottage at Wyncote, Pa., erected at a cost of \$4,250 complete. Floor plans and perspective elevation. Mr. A. S. Wade, Philadelphia, Pa., architect.
- A modern colonial residence at Oak Lane, Pa., erected at a cost of \$6,800 complete. Perspective view and floor plans. Mr. F. R. Watson, of Philadelphia, Pa., architect. An attractive design.
- The residence of Rev. Samuel Scoville at Stamford, Conn., erected at a cost of \$6,616. Mr. W. W. Kent, architect, New York. An excellent design.
- Examples of interior decoration and furniture in the Moorish style.
- A Queen Anne dwelling at Jenkintown, Pa., recently completed at a cost of \$5,000. Messrs. Burke & Dolhenty, Wyncote, Pa., architects.
- Miscellaneous Contents: The growth of plants in odd places.—Acoustics in buildings.—Improved steam power brick machine, illustrated.—A new style stamped ceiling, illustrated.—The telerometer or distant temperature indicator.—The improved Thatcher furnace, illustrated.—Improved sash chains and fixtures, illustrated.—An improved sliding door latch, illustrated.—Aluminate in cement plaster.—Fire losses of 1893.—Graphite paint.—The Columbian sash and door lock, illustrated.—An improved sash lift, illustrated.

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